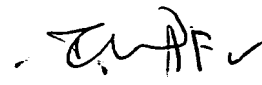
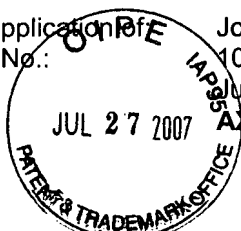


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Docket No.: 331.1048
Date: July 23, 2007

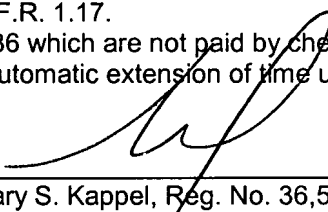
In re application of Joachim WOLF, et al.
Serial No.: 10/627,080
Filed: July 25, 2003
For: AXLE BOOT



Sir:

Transmitted herewith is an **Appellant's Brief Under 37 C.F.R. §41.37 (19 pages)** in the above-identified application.

- ☒ Also transmitted herewith are:
- ☐ Petition for extension under 37 C.F.R. 1.136
 - ☒ Return Receipt Postcard
 - ☐ Other:
- ☒ Check(s) in the amount of **\$500.00** is/are attached to cover:
- ☐ Filing fee for additional claims under 37 C.F.R. 1.16
 - ☐ Petition fee for extension under 37 C.F.R. 1.136
 - ☒ Other: **Fee for Filing a Brief in Support of an Appeal under 37 C.F.R. §41.02(b)(2)**
 - ☐ Other:
- ☒ The Assistant Commissioner is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No. 50-0552.
- ☒ Any filing fee under 37 C.F.R. 1.16 for the presentation of additional claims which are not paid by check submitted herewith.
 - ☒ Any patent application processing fees under 37 C.F.R. 1.17.
 - ☒ Any petition fees for extension under 37 C.F.R. 1.136 which are not paid by check submitted herewith, and it is hereby requested that this be a petition for an automatic extension of time under 37 CFR 1.136.


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I hereby certify that the documents referred to as attached therein and/or fee are being deposited with the United States Postal Service as "first class mail" with sufficient postage in an envelope addressed to "Mail Stop: APPEAL BRIEF-PATENTS, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" on July 23, 2007.

DAVIDSON, DAVIDSON & KAPPEL, LLC

BY: 

Sunil Raval



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Applicant: Joachim WOLF et al. Examiner: Alison K. Pickard
Application No.: 10/627,080 Confirmation No.: 3127
Filing Date: July 25, 2003 Art Unit: 3673
Customer No.: 23280 Attorney Docket: 331.1048
Title: **AXLE BOOT**

Mail Stop: APPEAL BRIEF – PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

July 23, 2007

APPELLANT'S BRIEF UNDER 37 C.F.R. § 41.37

Sir:

Appellant submits this brief for the consideration by the Board of Patent Appeals and Interferences (the "Board") in support of his appeal of the Final Rejection dated May 22, 2007 in this application. The statutory fee of \$500.00 for filing an appeal brief is paid concurrently herewith.

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I. REAL PARTY IN INTEREST

The real party in interest is Carl Freudenberg KG, a corporation having a place of business in Weinheim, Germany.

II. RELATED APPEALS AND INTERFERENCES

Appellant, his legal representatives, and assignee are not aware of any appeal, interference or judicial proceeding that directly affects, will be directly affected by, or will have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

Claims 1 to 3, 6, 9 to 13, 15 to 19 are pending. Claims 4, 5, 7, 8, 14, 20 and 21 have been cancelled. Claims 1 to 3, 9 to 13, 15 to 19 have been finally rejected as per the Final Office Action dated February 20, 2007. Claim 6 was objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The rejection to claims 1 to 3, 9 to 13, 15 to 19 thus is appealed. A copy of appealed claims 1 to 3, 9 to 13, 15 to 19 is attached hereto as Appendix A.

IV. STATUS OF AMENDMENTS AFTER FINAL

No amendments to the claims were filed after the final rejection. An advisory action was mailed on June 18, 2007. A Notice of Appeal was filed on May 18, 2007 and received by the U.S.P.T.O. on May 22, 2007.

SUMMARY OF THE CLAIMED SUBJECT MATTER

Independent claim 1 recites an axle boot for joint sealing, comprising:

a joint housing including an external contour having a plurality of radial recesses (i.e. specification, see paragraph [0024], page 5, line 13; see Fig. 1, joint housing 1, radial recesses 2);

a substantially axisymmetric bellows including an integral connecting collar formed as a single piece (i.e. specification, see paragraphs [0024] and [0025], page 5, lines 14 to 18; see Fig. 1, bellows 4; connecting collar 5), the connecting collar including a plurality of indentations projecting radially inward (i.e. specification, see paragraph [0025], page 5, lines 19 to 20; see Fig. 1, indentations 5a), each indentation adapted to one of the radial recesses (i.e. specification, see paragraph [0025], page 5, lines 19 to 20);

a plurality of compensating pieces connected to one another by a plurality of ring sections to form a single piece component surrounding an outer circumference of the connecting collar (i.e. specification, see paragraphs [0028] and [0029], page 6 at lines 1 to 14; see Figs. 5 to 7, compensating pieces 6 and 6'; ring sections 9'), the single piece component having a cylindrical outer circumferential surface, wherein at least one of the ring sections is elastically deformable sufficient to enable the single piece component to expand to a circumference larger than the outer circumference of the connecting collar (i.e. specification, see paragraph [0029], page 6, lines 6 to 14; see Fig. 7); and

a circumferential clamp surrounding and contacting the single piece component (i.e. specification, see paragraphs [0015] and [0026], page 4 at lines 16 to 19 and page 5 at lines 22 to 27; see Fig. 1, clamp 7).

Claim 13 (previously presented): An axle boot for joint sealing, comprising:

a joint housing including an external contour having a plurality of radial recesses (i.e. specification, see paragraph [0024], page 5, line 13; see Fig. 1, joint housing 1, radial recesses 2);

a substantially axisymmetric bellows including an integral connecting collar formed as a single piece (i.e. specification, see paragraphs [0024] and [0025], page 5, lines 14 to 18; see Fig. 1, bellows 4; connecting collar 5), the connecting collar including a plurality of indentations projecting radially inward (i.e. specification, see paragraph [0025], page 5, lines 19 to 20; see

Fig. 1, indentations 5a), each indentation adapted to one of the radial recesses (i.e. specification, see paragraph [0025], page 5, lines 19 to 20);

a plurality of compensating pieces disposed adjacent an outer surface of the connecting collar so as to form a cylindrical outer circumferential surface (i.e. specification, see paragraph [0026], page 5, lines 22 to 27; see Fig. 1, compensating pieces 6; connecting collar 5); and

a circumferential clamp disposed adjacent an outer surface of the connecting pieces (i.e. specification, see paragraph [0030], page 6, lines 16 to 18; clamp 7), wherein the connecting pieces are connected to the clamp as an integrated multi-component unit (i.e. specification, see paragraph [0030], page 6, lines 16 to 18);

wherein each of the plurality of compensating pieces are connected to the clamp using at least one rivet (i.e. specification, see paragraph [0027], page 5, lines 29 to 30; see Figs. 1 to 4, compensating pieces 6, clamp 7, rivets 8).

V. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1 to 3, and 9 to 12 were rejected under §103(a) as being unpatentable over Baker, U.S. Patent No. 4,936,811, in view of Devers, U.S. Patent No. 6,672,596. Claims 13 and 15 were rejected under 35 U.S.C. §103(a) as being unpatentable over JP '464. Claims 16 to 19 were rejected under 35 U.S.C. §103(a) as being unpatentable over JP '464 as applied to claim 13, and further in view of Devers.

Claim 6 was objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

VI. ARGUMENTS

A. Rejections under 35 U.S.C. § 103(a)

Rejections under 35 U.S.C. § 103(a)- Baker, U.S. Patent No. 4,936,811, in view of Devers, U.S. Patent No. 6,672,596.

Claims 1 to 3, and 9 to 12 were rejected under §103(a) as being unpatentable over Baker, U.S. Patent No. 4,936,811, in view of Devers, U.S. Patent No. 6,672,596.

Baker discloses segmented band sections 30 that are longitudinally aligned over the sleeve 15 and housing 16 such that the tongues 34 and grooves 36 intermesh to form the band 22. See Baker, col. 4, lines 31 to 34. The tongue and groove design of the band 22 permits the circumferential movement of the band 22 thereby isolating the clamp from having excessive loads applied thereto by movement of the joint 10. See Baker, col. 4, lines 38 to 41.

Devers discloses a seal adaptor comprising an annular body 41 having a specifically configured inner surface 42 that conforms to the shape of the non-uniform outer surface 36. See Devers, col. 3, lines 39 to 42. The seal adaptor assembly includes wall segments 42a-f that define a plurality of pockets 43. See Devers, col. 3, lines 49 to 50. Each of these pockets is filled with a general trapezoidally shaped cup-like insert. See Devers, col. 3, lines 51 to 52. Each insert 44 is selected to have a rigidity greater than that of the material of the annular body 41 of the seal adaptor assembly 40. See Devers, col. 3, lines 63 to 65.

Devers further discloses that the seal adaptor assembly 40 can be assembled by a method as set-forth therein by virtue of having enough pliability to be pulled over the end 12a of the housing 12 until the specifically configured inner surface 42 thereof is located to conform to the non-uniform surface 36 of the housing 12. See Devers, col. 4, lines 10 to 15. The inserts 44 can be assembled either prior to fitting of the seal adaptor assembly 40 on the housing 12 or thereafter. See Devers, col. 4, lines 15 to 17. If preassembled the inserts can be premolded into the pockets, if post assembled the inserts can be pressed or snapped into the pockets after the seal adaptor assembly is connected to the housing. See Devers, col. 4, lines 17 to 24.

Claim 1 provides an axle boot for joint sealing, comprising:

a joint housing including an external contour having a plurality of radial recesses;
a substantially axisymmetric bellows including an integral connecting collar formed as a single piece, the connecting collar including a plurality of indentations projecting radially inward, each indentation adapted to one of the radial recesses;

a plurality of compensating pieces connected to one another by a plurality of ring sections to form a single piece component surrounding an outer circumference of the connecting collar, the single piece component having a cylindrical outer circumferential surface, wherein at least one of the ring sections is elastically deformable sufficient to enable the single piece component to expand to a circumference larger than the outer circumference of the connecting collar; and
a circumferential clamp surrounding and contacting the single piece component.

As admitted by the Final Office Action, Baker does not show “wherein at least one of the ring sections is elastically deformable sufficient to enable the single piece component to expand to a circumference larger than the outer circumference of the connecting collar” as recited in claim 1 of the present invention. See Final Office Action, page 2.

In fact, a main purpose of Baker is to avoid such elasticity: “since the segments [sections 30] are *individually* free to move into the axially concave outer depression of the joint, the clamping force is effectively transmitted to the boot itself.” Column 2, lines 64 to 68 (emphasis added). Baker specifically teaches away from the elastomeric deformable solutions as discussed at col. 1, line 41 to col. 2.

There is no teaching or disclosure in Devers to modify Baker to provide “at least one of the ring sections [being] elastically deformable sufficient to enable the single piece component to expand to a circumference larger than the outer circumference of the connecting collar” as recited in claim 1 of the present invention as the entire purpose of Baker is to permit the sections 30 to be individually free to move with respect to one another. This is also clear from claim 1 of Baker which recites “a plurality of *individual and separate* band sections.”

It is respectfully submitted that a fair reading of both Baker and Devers shows that there is absolutely no reason one of skill in the art would have connected the individual and separate pieces of Baker in an elastically deformable manner.

Moreover, Baker desires that the tongue and groove design permit “circumferential movement of the band 22.” See column 4, lines 38 to 40. To have provided elastic

deformability in place of the tongue and groove design would have made such circumferential movement difficult or impossible, as the elastic material would bulge.

Furthermore, Devers seeks to have the annular body 41 fit within boot seal 38 as shown in Fig. 4. There also is no teaching in Devers to make the segmented bands 22 of Baker “elastically deformable sufficient to enable the single piece component to expand to a circumference larger than the outer circumference of the connecting collar” as claimed in claim 1.

Withdrawal of the rejections to claim 1 and its dependent claims under 35 U.S.C. §103(a) is respectfully requested.

Baker, U.S. Patent No. 4,936,811, in view of Devers, U.S. Patent No. 6,672,596- Rejection of Claim 9 Argued Separately

With further respect to claim 9, claim 9 recites “wherein each compensating piece includes a more than one material component, each of the material components having a different hardness.”

There is absolutely no teaching or disclosure in Baker or Devers that “each compensating piece includes a more than one material component, each of the material components having a different hardness” as recited in claim 9 of the present invention. The Final Office action admits that Baker does not disclose that the pieces are made of more than one material. See Final Office Action, page 2. Devers states that the inserts 44 use a rigid material that is much stiffer than the annular body material to fill the housing spaces 34. However, Devers does not teach or disclose that the inserts 44 “includes more than one material component, each of the material components having a different hardness” as recited in claim 9 of the present invention.

Withdrawal of the rejections to claim 9 is respectfully requested.

Rejections under 35 U.S.C. § 103(a)- JP ‘464

Claims 13 and 15 were rejected under 35 U.S.C. §103(a) as being unpatentable over JP ‘464.

JP ‘464 discloses a band for a tri-pod type universal joint. The device is used to clamp a boot to a tri-pod universal joint. The device features a band or a clamp portion of a boot.

Claim 13 recites an axle boot for joint sealing, comprising:
a joint housing including an external contour having a plurality of radial recesses;
a substantially axisymmetric bellows including an integral connecting collar formed as a single piece, the connecting collar including a plurality of indentations projecting radially inward, each indentation adapted to one of the radial recesses;
a plurality of compensating pieces disposed adjacent an outer surface of the connecting collar so as to form a cylindrical outer circumferential surface; and
a circumferential clamp disposed adjacent an outer surface of the connecting pieces, wherein the connecting pieces are connected to the clamp as an integrated multi-component unit; wherein each of the plurality of compensating pieces are connected to the clamp using at least one rivet.

JP '464 does not appear to be rivetable. It is not clear how rivets would be used to connect the pieces shown. There is no showing or disclosure to use rivots especially given the form and shape of pieces 28 and 14.

Withdrawal of the rejections to claim 13 and its dependent claim 15 under 35 U.S.C. §103(a) is respectfully requested.

JP '464- Rejection of Claim 15 Argued Separately

With further respect to claim 15, claim 15 recites “a circumferential length of each of the plurality of compensating pieces corresponds approximately to a circumferential length of an associated radial recess.” JP '464 does not show or teach this limitation, nor is there any reason to modify JP '464 so “a circumferential length of each of the plurality of compensating pieces corresponds approximately to a circumferential length of an associated radial recess.”

Withdrawal of the rejections to claim 15 under 35 U.S.C. §103(a) is respectfully requested.

Rejections under 35 U.S.C. § 103(a)- JP '464 in view of Devers

Claims 16 to 19 were rejected under 35 U.S.C. §103(a) as being unpatentable over JP '464 further in view of Devers.

JP '464 and Devers are discussed above.

Claim 16 depends from claim 13 and recites “each compensating piece includes a more than one material component, each of the material components having a different hardness.”

Claim 17 depends from claim 13 and recites “each of the compensating pieces is a fluid-filled hollow body having flexible walls.”

Claim 18 depends from claim 13 and recites “the bellows is made of a thermoplastic copolyester (TPE).”

For the same reasons that independent parent claim 13 is patentable over JP ‘464, as discussed above, dependent claims 16 to 19 are not rendered obvious by JP ‘464. As noted above, JP ‘464 fails to disclose or suggest how rivets would be used to connect the pieces, e.g. 28 and 14. In addition, Devers does not cure this defect in JP ‘264.

There is also no teaching or disclosure to combine the band of JP ‘464 with the seal adaptor assembly in Devers. There is no reason one of skill in the art would have combined the rigid material inserts from Devers with the band of JP ‘464.

Withdrawal of the rejections to claims 16 to 19 under 35 U.S.C. §103(a) is respectfully requested.

JP ‘464 in view of Devers- Rejection of Claim 19 Argued Separately

With further respect to claim 19, claim 19 recites “each of the plurality of compensation pieces includes at least one radial supporting web.” Neither JP ‘464 nor Devers show or teach this limitation.

Withdrawal of the rejections to claim 19 under 35 U.S.C. §103(a) is respectfully requested.

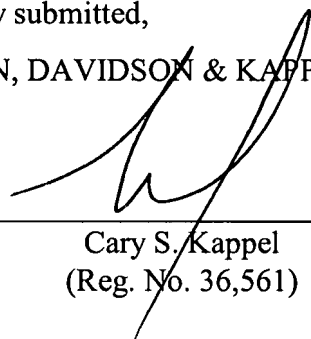
CONCLUSION

It is respectfully submitted that the application is in condition for allowance. Favorable consideration of this appeal brief is respectfully requested.

Respectfully submitted,

DAVIDSON, DAVIDSON & KAPPEL, LLC

By: _____


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APPENDIX A:

APPEALED CLAIMS 1 to 3, 9 to 13, 15 to 19 of
U.S. APPLICATION SERIAL NO. 10/627,080

Claim 1 (previously presented): An axle boot for joint sealing, comprising:

- a joint housing including an external contour having a plurality of radial recesses;
- a substantially axisymmetric bellows including an integral connecting collar formed as a single piece, the connecting collar including a plurality of indentations projecting radially inward, each indentation adapted to one of the radial recesses;
- a plurality of compensating pieces connected to one another by a plurality of ring sections to form a single piece component surrounding an outer circumference of the connecting collar, the single piece component having a cylindrical outer circumferential surface, wherein at least one of the ring sections is elastically deformable sufficient to enable the single piece component to expand to a circumference larger than the outer circumference of the connecting collar; and
- a circumferential clamp surrounding and contacting the single piece component.

Claim 2 (original): The axle boot as recited in claim 1, wherein the axle boot is for sealing a joint on a drive train of a motor vehicle.

Claim 3 (original): The axle boot as recited in claim 1, wherein a circumferential length of each of the plurality of compensating pieces corresponds approximately to a circumferential length of an associated radial recess.

Claim 9 (original): The axle boot as recited in claim 1, wherein each compensating piece includes a more than one material component, each of the material components having a different hardness.

Claim 10 (original): The axle boot as recited in claim 1, wherein each of the compensating pieces is a fluid-filled hollow body having flexible walls.

Claim 11 (original): The axle boot as recited in claim 1, wherein the bellows is made of a thermoplastic copolyester (TPE).

Claim 12 (previously presented): The axle boot as recited in claim 1, wherein each of the plurality of compensation pieces includes at least one radial supporting web.

Claim 13 (previously presented): An axle boot for joint sealing, comprising:

- a joint housing including an external contour having a plurality of radial recesses;

- a substantially axisymmetric bellows including an integral connecting collar formed as a single piece, the connecting collar including a plurality of indentations projecting radially inward, each indentation adapted to one of the radial recesses;

- a plurality of compensating pieces disposed adjacent an outer surface of the connecting collar so as to form a cylindrical outer circumferential surface; and

- a circumferential clamp disposed adjacent an outer surface of the connecting pieces, wherein the connecting pieces are connected to the clamp as an integrated multi-component unit;

- wherein each of the plurality of compensating pieces are connected to the clamp using at least one rivet.

Claim 15 (previously presented): The axle boot as recited in claim 13, wherein a circumferential length of each of the plurality of compensating pieces corresponds approximately to a circumferential length of an associated radial recess.

Claim 16 (previously presented): The axle boot as recited in claim 13, wherein each compensating piece includes a more than one material component, each of the material components having a different hardness.

Claim 17 (previously presented): The axle boot as recited in claim 13, wherein each of the compensating pieces is a fluid-filled hollow body having flexible walls.

Claim 18 (previously presented): The axle boot as recited in claim 13, wherein the bellows is

made of a thermoplastic copolyester (TPE).

Claim 19 (previously presented): The axle boot as recited in claim 13, wherein each of the plurality of compensation pieces includes at least one radial supporting web.



APPENDIX B

Evidence Appendix under 37 C.F.R. §41.37 (c) (ix):

No evidence pursuant to 37 C.F.R. §§1.130, 1.131 or 1.132 and relied upon in the appeal has been submitted by appellants or entered by the examiner.



APPENDIX C

Related proceedings appendix under 37 C.F.R. §41.37 (c) (x):

As stated in "II. RELATED APPEALS AND INTERFERENCES" of this appeal brief, appellants, their legal representatives, and assignee are not aware of any appeal or interference that directly affects, will be directly affected by, or will have a bearing on the Board's decision in this appeal.